This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

1-23. Canceled.

24. (NEW) A method for the selective removal of material from the surface of a silicon-containing substrate for forming a deepening, comprising the steps of:

applying a mask onto the substrate surface in accordance with the desired selective removal, aluminium being used for forming the mask,

dry-etching the substrate, and

inductively coupling power into the etching medium during dry etching,

characterized in that

a cavity of a depth of at least 150 μm is generated at an etch rate of at least 2 μm/min,

in turn with etching steps passivation steps are included, and

the substrate is kept at a distance from the inductive coupling of at least two times, preferably at least three times, the mean free path length of the plasma atoms, or at a distance of at least 8 cm from the inductive coupling.

25. (NEW) The method according to claim 24, characterized in that the substrate is kept at a distance of at least 10 cm from the inductive coupling.

26. (NEW) The method according to claim 24, characterized in that during etching the pressure is below 15 Pa, preferably below 10 Pa, and/or above 1 Pa, preferably above 2 Pa.

27. (NEW) The method according to claim 24, characterized in that material is removed up to the other side of the substrate.

28. (NEW) The method according to claim 24, characterized in that a mask having a thickness of below 1.5 μm, preferably below 0.6 μm, is formed.

29. (NEW) The method according claim 24, characterized in that the substrate is masked up to the edge.

30. (NEW) The method according to claim 24, characterized in that when the mask is applied aluminum is vapor-deposited or sputtered.

31. (NEW) The method according to claim 24, characterized in that when the mask is applied a metallic layer is etched in accordance with the desired selective removal.

32. (NEW) The method according to claim 24, characterized in that the metal used contains at least 90% by weight Al.

33. (NEW) The method according to claim 24, characterized in that the etch position (T) is determined repeatedly in the depthwise direction, etching being concluded or a second etching process, which is qualitatively different or proceeds with operating parameters differing from those of the preceding etching process, being employed when a certain position has been reached.

34. (NEW) The method according to claim 33, characterized in that the depth is determined by means of laser light whose properties are analyzed after being reflected by the bottom, in particular with respect to the first derivative of a detected signal.

35. (NEW) The method according to claim 33, characterized in that in the second etching process etching is carried out in a dry condition with inductively power-coupled plasma, the gas pressure being higher and/or the applied bias being lower.

36. (NEW) The method according to claim 34, characterized in that in the second etching process etching is carried out in a dry condition with inductively power-coupled plasma, the gas pressure being higher and/or the applied bias being lower.

37. (NEW) The method according to claim 33, characterized in that after the second etching process a third etching process is applied which is qualitatively different from the preceding etching process or proceeds with operating parameters differing from those of the preceding etching process.

38. (NEW) The method according to claim 34, characterized in that after the second etching process a third etching process is applied which is qualitatively different from the preceding etching process or proceeds with operating parameters differing from those of the preceding etching process.

39. (NEW) The method according to claim 35, characterized in that after the second etching process a third etching process is applied which is qualitatively different from the preceding etching process or proceeds with operating parameters differing from those of the preceding etching process.

40. (NEW) The method according to claim 37, characterized in that in the third etching process etching is carried out in a dry and isotropic condition and preferably with inductively power-coupled plasma, wherein the applied bias may be 0.

41. (NEW) The method according to claim 24, characterized in that before the mask is removed an incineration step for polymer residues on the mask is preferably provided by wet etching.

42. (NEW) The method according to claim 41, characterized in that the incineration is effected by means of oxygen plasma.

43. (NEW) The method according to claim 41, characterized in that the incineration is followed by a treatment with tetramethylammonium hydroxide.

44. (NEW) The method according to claim 42, characterized in that the incineration is followed by a treatment with tetramethylammonium hydroxide.

45. (NEW) The method according to claim 24, characterized by one or more of the following features:

the material is removed from more than 8%, preferably more than 20%, of the substrate surface,

the substrate is a disk-like wafer having a diameter of at least 10 cm, preferably at least 15 cm.

46. (NEW) Use of aluminum or an aluminum alloy having at least 90% by weight Al or of a composite material having at least 90% by weight Al as a masking material for substrates which are to be etched in a dry condition using inductively power-coupled plasma up to a depth of at least 300 μm at an etch rate of at least 2 μm/min, wherein the substrate is kept at a distance from the inductive coupling of at least two times, preferably at least three times, the mean free path length of the plasma atoms, or at a distance of at least 8 cm from the inductive coupling, and wherein in turn with etching steps passivation steps are included.

47. (NEW) A mask material for masking wafers to be etched, the material containing aluminum,

characterized in that

the aluminum amount is more than 90% by weight, preferably more than 95% by weight, and

a copper amount between 0.5 and 2% by weight, preferably below 1% by weight, and/or a silicon amount between 0.5 and 2% by weight and/or a titanium amount between 0.2% by weight and 3% by weight, preferably below 1.5% by weight, are admixed.

48. (NEW) Wafer having a masking layer with a masking material according to claim 47.

49. (NEW) A method for the selective removal of material from the surface of a silicon-containing substrate for forming a deepening, comprising the steps of:

applying a mask onto the substrate surface in accordance with the desired selective removal, aluminium being used for forming the mask,

dry-etching the substrate, and

inductively coupling power into the etching medium during dry etching,

characterized in that

a cavity which fully penetrates through the substrate is generated at an etch rate of 2 μm/min,

in turn with etching steps passivation steps are included, and

the substrate is kept at a distance from the inductive coupling of at least two times, preferably at least three times, the mean free path length of the plasma atoms, or at a distance of at least 8 cm from the inductive coupling, an electric field is applied between the substrate and the inductive coupling.